

**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT**

**SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
(PROPOSITION 65)**

Notice Of Intent To List Imazalil

December 3, 2010

The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) has found that imazalil meets the criteria for listing as known to the State to cause cancer under the Safe Drinking Water and Toxic Enforcement Act of 1986¹. This action is being taken under the authoritative bodies listing mechanism².

| Chemical | CAS No. | Endpoint | Reference | Chemical Use |
|-----------------|----------------|-----------------|---|---|
| Imazalil | 35554-44-0 | Cancer | U.S. EPA (1999, 2002, 2003, 2005) | Systemic fungicide used post-harvest on bananas, citrus; pre-planting to treat barley and wheat seed; and in nonfood use for chicken hatchery treatments. |

OEHHA requested information relevant to the possible listing of imazalil in a notice published in the *California Regulatory Notice Register* on June 27, 2008 (Register 2008, No. 26-Z). OEHHA responded to the public comments received.

Background on listing via the authoritative bodies mechanism: A chemical must be listed under the Proposition 65 regulations when two conditions are met:

- 1) An authoritative body formally identifies the chemical as causing cancer (Section 25306(d)³).
- 2) The evidence considered by the authoritative body meets the sufficiency criteria contained in the regulations (Section 25306(e)).

However, the chemical is not listed if scientifically valid data which were not considered by the authoritative body clearly establish that the sufficiency of evidence criteria were not met (Section 25306 (f)).

¹ Commonly known as Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986 is codified in Health and Safety Code section 25249.5 *et seq.*

² See Health and Safety Code section 25249.8(b) and Title 27, Cal. Code of Regs., section 25306.

³ All referenced sections are from Title 27 of the Cal. Code of Regs.

The U.S. Environmental Protection Agency (U.S. EPA) is one of several institutions designated as authoritative for the identification of chemicals as causing cancer (Section 25306(m)).

OEHHA is the lead agency for implementation of Proposition 65. After an authoritative body has made a determination about a chemical, OEHHA evaluates whether listing under Proposition 65 is required using the criteria contained in the regulations.

OEHHA's determination: Imazalil meets the criteria for listing as known to the State to cause cancer under Proposition 65, based on findings of the U.S. EPA (U.S. EPA, 1999; 2002; 2003; 2005).

Formal identification and sufficiency of evidence for imazalil: In 1999 the U.S. EPA published a report on imazalil entitled *Cancer Assessment Document. Evaluation of the Carcinogenic Potential of Imazalil (Third Review)* (U.S. EPA, 1999). This report concludes that the chemical causes cancer. Subsequent U.S. EPA reports published in 2002, 2003, and 2005 reaffirm findings from the 1999 report that imazalil causes cancer. These reports (U.S. EPA, 1999; 2002; 2003; 2005) satisfy the formal identification and sufficiency of evidence criteria in the Proposition 65 regulations.

OEHHA is relying on the U.S. EPA's discussion of data and conclusions in these reports that imazalil causes cancer. The U.S. EPA (1999; 2002; 2003; 2005) reports conclude that imazalil is "**likely to be carcinogenic in humans,**" based on the following weight-of-the-evidence, as quoted from the 1999 report (U.S. EPA, 1999):

1. "There was an increase (both trend and pair-wise) in combined liver adenomas/carcinomas in **male** Swiss albino mice and **male** Wistar rats and an increase in combined thyroid follicular adenomas/carcinomas in **male** Wistar rats.
2. Imazalil was **negative** in *in vivo* and *in vitro* mutagenicity assays.
3. It is structurally related to triazole compounds, which are hepatocarcinogens in mice." (emphasis in original)

Thus, the U.S. EPA (1999; 2002; 2003; 2005) has found that imazalil causes increased incidences of combined benign and malignant liver tumors in male rats and mice and combined benign and malignant thyroid tumors in male rats.

OEHHA is aware that U.S. EPA is considering a possible mode of action (MOA) for imazalil. In the event that U.S. EPA concludes that, based on this MOA, imazalil is not likely to cause cancer in humans, OEHHA will reconsider the listing of the chemical under Proposition 65, as allowed by Title 27, Cal. Code of Regs., section 25306(j).

Request for comments: OEHHA is committed to public participation in its implementation of Proposition 65. OEHHA wants to ensure that its regulatory decisions are based on a thorough consideration of all relevant information. If you wish to comment on whether this chemical meets the criteria for listing provided in Section 25306, please **submit your comments to OEHHA by 5:00 p.m. on Monday, January 10, 2011.** We encourage you to submit comments in electronic form, rather than in

paper form. Comments transmitted by e-mail should be addressed to coshita@oehha.ca.gov. Comments submitted in paper form may be mailed, faxed, or delivered in person to the addresses below:

Mailing Address: Ms. Cynthia Oshita
Office of Environmental Health Hazard Assessment
P.O. Box 4010, MS-19B
Sacramento, California 95812-4010

Fax: (916) 323-8803

Street Address: 1001 I Street
Sacramento, California 95814

If you have any questions, please contact Ms. Oshita at coshita@oehha.ca.gov or at (916) 445-6900.

References

U.S. EPA (U.S. Environmental Protection Agency) 1999. Cancer Assessment Document. Evaluation of the Carcinogenic Potential of Imazalil (Third Review). Cancer Assessment Review Committee. Health Effects Division. Office of Pesticide Programs. December 7, 1999.

U.S. EPA (U.S. Environmental Protection Agency) 2002. Imazalil: The Revised HED Toxicology Chapter for the Reregistration Eligibility Decision Document (RED). PC Code 111901, Case 816389. HED Document No. 0050434. U.S. EPA, Office of Pesticide Programs, Washington DC, 20460, January 31, 2002.

U.S. EPA (U.S. Environmental Protection Agency) 2003. Reregistration Eligibility Decision for Imazalil. Chemical List B. Case No. 2325. Office of Prevention, Pesticides and Toxic Substances, U.S. EPA, Washington DC.

U.S. EPA (U.S. Environmental Protection Agency) 2005. R.E.D. Facts. Imazalil. EPA-738-F-04-011. Office of Prevention, Pesticides and Toxic Substances, U.S. EPA, Washington DC.